

CHAPTER 3

Environmental accounting in South Africa

3.1 BACKGROUND

Corporate environmental and social impacts have significant and increasing influence on the financial performance of companies. Due to this financial influence, it is even more important for managers to use an information tool that will allow them to manage and control these impacts. Environmental accounting is that tool, both conceptually and in practice.

The United States Environmental Protection Agency (USEPA) was the first national government organisation in the world to establish a formal programme to promote the use of environmental accounting for managerial decision making (Savage, 2003a). The agency's early efforts in the 1980's focused on the use of corporate environmental accounting for pollution prevention efforts, but later broadened to include other environmental accounting applications, such as supply chain management and sustainable environmental management. Since the establishment of the agency's environmental accounting programme, extensive research in the United States and other first world countries have developed the understanding of environmental accounting principles and enhanced application of environmental accounting systems for worldwide corporate decision making (Savage, 2003b).

Environmental accounting has now become a well accepted and valuable corporate instrument and environmental best practice technique. Businesses and government organisations in more than 25 countries are at this stage promoting and implementing environmental accounting as part of their environmental management systems, including (UN, 2001): Argentina, Australia, Austria, Canada, Colombia, the Czech Republic, Denmark, Egypt, Finland, Germany, Guatemala, Italy, Japan, the Republic of Korea, the Netherlands, Nicaragua, Peru, the Philippines, Portugal, the Slovak Republic, Sweden, Tanzania, the United Kingdom, the United States, Vietnam and Zimbabwe.

In addition, regional and international governments are also promoting environmental accounting. These include the European Commission, the United Nations Environment Programme, and the United Nations Division for Sustainable Development (UN, 2001).

In the South African context, a large number of research projects have been conducted dealing with environmental accounting principles. These include, *inter alia*, the work of:

- Blignaut (1995), who researched the overall state of environmental accounting in South Africa;
- Van Horen (1996), who has done extensive research on externality costs;
- Winckler *et al.* (2001) and Blignaut and King (2002), whose research was directed at environmental accounting in especially the energy sector;
- Blignaut and De Wet (2002), who have established a forum for bridging the economic and environmental divide in South Africa; and
- Spalding-Fecher and Matibe (2003), who have valued electricity and electricity production factors in terms of external costs.

Unfortunately, South African companies do not have the incentives to employ a standalone corporate environmental accounting system and only subscribe to environmental accounting principles as part of their environmental management systems (Immink and Sephton, 2003). This is primarily due to the lack of available and adequate South African environmental accounting systems and environmental impact data, together with the requisite of awareness regarding legal requirements and the need of enforcement of applicable regulations in general (Hattingh, 2002).

KPMG South Africa has surveyed South Africa's 19 most influential companies regarding their environmental management systems. The findings of this survey suggest that there is a growing awareness of the significant financial implications of environmental performance and that environmental accounting practices are gradually increasing. The current application of corporate environmental accounting, however, remains at extremely low levels (KPMG, 2001).

Most of the South African companies measure environmental information relating to capital costs, operating costs, liabilities, donations and provisions. However, very few companies are reporting these in their annual financial statements, or even in their separate corporate environmental reports. Application of environmental accounting methods, especially the tracking of financial benefits relating to environmental programmes, further remains the exception rather than the rule. Consequently, there are also very few companies that can readily access information on their environmental costs and liabilities, or be in a position to disclose these costs in their annual reports.

Firm corporate environmental accounting systems therefore still needs to be promoted in South Africa. To promote environmental accounting in South Africa, it is needed to understand first the drivers of environmental accounting in a developing country, second the current state of corporate environmental awareness and thirdly the possible solutions to implementing corporate environmental accounting.

3.2 DRIVERS OF ENVIRONMENTAL ACCOUNTING

Drivers of environmental accounting are inevitably going to be different between first world and developing countries. In first world countries drivers for environmental accounting include the social demands and the significant international environmental legislation that has forced companies to undertake and participate in extensive sustainable environmental management.

Commensurate with the considerable growth in environmental regulation, organisations increasingly recognise the importance of addressing environmental issues effectively. For example, firms are adopting environmental policies and introducing ecological quality controls to enhance social and environmental compliance. Moreover, a firm's poor environmental performance may result in sanctions and penalties, as well as a reduction of its stock market capitalisation. There is also a growing expectation that firms that are strong environmental performers make better investments (Hattingh, 2002).

3.3 CORPORATE ENVIRONMENTAL ACCOUNTING

In South Africa though, drivers of environmental and social performance and adoption of corporate environmental accounting principles were largely incentive based up to now. Environmental reporting, for example, has primarily been by disclosures of financial statements addressing in particular the use of environmental disclosures to investors and other stakeholders, whereas environmental accounting principles were employed based on waste minimisation incentives and the encouragement to compare with international standards (Immink and Sephton, 2003).

This is primarily due to a lack of enforcement of applicable environmental and social regulations by governmental authorities. Yet, since reporting by firms of their environmental and social performance and responsibility has been legitimated, South African companies tend to give more attention to the environmental and social impacts of their operations. Drivers for environmental accounting now include the requirement to reduce reputational risks, potential fines and decreasing market interests.

Environmental and social compliance can also be profitable. This profitability may be linked to reduced costs through, *inter alia*, more efficient processes or reduced resource use. Should a company have the potential to reduce the emissions of greenhouse gases (GHG), for example, they could potentially benefit from international agreements around carbon credits. It is widely acknowledged that it will be financially attractive to invest in GHG mitigation projects in developing countries. Compared with international standards, countries such as South Africa have poor levels of energy efficiency and high pollutant levels. Therefore the cost to reduce GHG's could be lower (Immink and Sephton, 2003).

Another driver of corporate environmental accounting relates to sustainable biodiversity exploration. One of South Africa's greatest assets is its biodiversity. Biodiversity not only supports resources, but also a tourism industry that is responsible for a large percentage of South Africa's capital gain (Blignaut, 2004).

3.3 CORPORATE ENVIRONMENTAL ACCOUNTING

Most South African companies have formal environmental management systems and that include waste-, water-, air-, and energy management programmes. Also, these companies subscribe to sound environmental and social performance, but lack rigorous and standalone environmental accounting systems (Blignaut, 2004). The following are three South African companies that were surveyed about their environmental accounting principles, coupled to their respective environmental management systems:

- SASOL,
- ESKOM, and
- Anglo American PLC.

The surveys were conducted with each company's environmental health and safety representative (Goede, 2004; Lukas, 2004 and Ireton, 2004). The surveys only applied to the company's environmental accounting systems, if any, and entailed the following basic questions:

1. Does the company have an environmental accounting system?
2. Is it a standalone system or is the system coupled to a wider environmental management system?
3. What system is used for environmental accounting in the company?
4. What are the benefits and disadvantages of the system?
5. What is the scope of environmental costs represented by the system?
6. What influenced the company to develop and implement an environmental accounting system?
7. What results do the company get from the system and how are the results employed for informed business decisions?
8. Are the system matured or does it still need some refinement?

The results from the survey showed that all three companies have matured environmental management systems. Only ESKOM has an environmental accounting system, whereas the other two companies do have the incentive to record environmental costs in a standalone environmental accounting system.

3.3.1 SASOL

SASOL is South Africa's leading petroleum products industry with a large proportion of its individual companies being ISO 14001 certified (Goede, 2004). The company's main environmental goal is to move beyond compliance and integrate product stewardship into its business operations. The company's operations have impacts on both the natural environment and human health. At present, SASOL does not have a standalone environmental accounting system. The company only applies environmental accounting principles as such that environmental and human health impacts of operations and new developments can be quantified and converted to economic value. This is solely for budget distribution and finance recognition (Goede, 2004).

There is a definite need for a standalone corporate environmental accounting system and research is currently being financed to develop such a justifiable system, given the limitations of its current environmental management system. Limitations to SASOL's environmental management system at present include (Goede, 2004):

- only the costs of conventional financial accounting is addressed,
- the scope of the system can be set to range within compliance boundaries which is a convenient way to disregard non-compliance,
- the system is solely compliance driven at present,
- only water and waste management are properly addressed with a disregard of air management, and
- environmental cost savings are most often linked to waste recycling and water reductions and energy savings.

SASOL admits the simplicity of their environmental accounting principles and environmental management system and acknowledges its limited application compared to systems available in first world countries. Resistance to convert to a standalone environmental accounting system is primarily finance driven. Not only are there high costs involved in the development and implementation of such a system, but adjusting SASOL's environmental performance using an environmental accounting system to compare with first world standards will certainly not be financially justifiable (Goede, 2004).

The benefit of SASOL's current environmental accounting principles for corporate decision making only includes an incentive to minimise waste and water pollution through enhanced environmental and human health awareness (Goede, 2004).

3.3.2 ESKOM

ESKOM is the main supplier of electricity in South Africa. Its operations include coal fired, nuclear and hydro power stations, with associated impacts on both the natural environment and human health (Lukas, 2004). Being an ISO 14001 aligned company, it has a well matured environmental management system. ESKOM designed and implemented a fairly comprehensive environmental accounting system, which allows for the extraction of detailed management cost information relating to environmental issues. ESKOM measures environmental and social impact costs and reports its conventional costs as capital costs and operational costs using the SAP financial accounting system. ESKOM does not measure and report intangible and external costs as such, although periodical surveys are run to determine company image and performance (Lukas, 2004).

The environmental accounting system is not a standalone system. The benefit hereof is reduced costs due to only a single operational environmental management system and no costs involved in the development and implementation of a standalone environmental accounting system (Lukas, 2004).

3.3.3 Anglo American PLC

Anglo American PLC supplies coal, gold, platinum and diamonds, amongst other minerals, to the South African consumer market and for international export. The company is comprised of different business units, all with their own environmental management systems. Nearly 63% of these business units are ISO 14001 certified (Ireton, 2004). Generally, the company does measure tangible environmental costs, but reports them as conventional costs, liabilities and provisions in financial accounting systems. Liabilities and provisions primarily relate to land rehabilitation and future remediation due to its mining activities. The environmental management systems do not incorporate standalone environmental accounting systems at present, and the need therefore is being researched at present (Ireton, 2004).

3.4 RATIONALE FOR ENVIRONMENTAL ACCOUNTING IN SOUTH AFRICA

There are numerous reasons why corporate environmental accounting would make good business sense to implement in South African industries. For example, environmental accounting can (Blignaut, 2004):

- demonstrate the impact of financial issues on the income statement and balance sheet,
- facilitate financial planning, such as the creation of provisions for potential environmental liabilities,
- help to identify cost reduction and process improvement opportunities, such as in the areas of water management, energy efficiency, waste reduction and biodiversity exploration,
- assist with the prioritisation of environmental actions, namely to focus on those issues with potentially the largest financial impact,
- guide product decisions, such as product development, pricing and mix, where activity based costing allows environmental costs to be factored in,
- support existing environmental management systems and environmental managers,
- demonstrate transparency to stakeholders, through reporting of environmental financial information, and
- encourage the move towards sustainable development or the triple bottom line (Nganwa, 2002), which integrates economic, environmental and social performance.

3.5 POSSIBLE IMPLEMENTATION SOLUTIONS

To implement environmental accounting in South African industries requires some definite fundamentals. These include more pronounced government involvement, introduction of a well defined legal framework and resource accounts, establishment of a readily available national environmental and economic data inventory and development of an environmental accounting model that will support informed business decisions.

3.5.1 Government involvement

The government of South Africa must become more involved in corporate decision making and establish environmental standards comparable to first world standards. All stakeholders share interest in sustainable environmental management. However, government involvement in corporate environmental performance is a critical requirement for corporate accountability towards the environment. Governments must promote and enforce the use of environmental accounting systems as an addition to integrated environmental management systems.

3.5.2 Introduction of a legal framework and resource accounts

To implement corporate environmental accounting in South Africa, a legal framework should exist that supports both the concept and the system. A legal framework can establish the necessary transparency with regard to data requirements and environmental and economic information. Legislation is also needed to widen the scope of an environmental accounting system. Yet, once a legal framework is established, it needs to be sufficiently enforced.

Up to now the South African government lacked the ability to enforce legislation. However, the Department of Environmental Affairs and Tourism claims to have set aside funds to establish a directorate of regulatory affairs in order to tighten the enforcement of environmental regulations. This is in combination with training programmes within the department of justice aimed at empowering a large number of new inspectors and monitors for the new legislation. Training programmes are also being developed for both local government and the judiciary, to increase their awareness and understanding of environmental legislation (Immink and Sephton, 2003).

Apart from legislation, the South African government recently realised the need for South African environmental resource accounts. South African resources are inexpensive compared to first world countries, energy resources are over-exploited and biodiversity does not receive the conservation it deserves. The first document published in the series of these accounts is the Woody Accounts (Blignaut, 2004).

These accounts acknowledge the vulnerability of the South African indigenous forests and the value of timber as a national resource. The Water and Mineral Accounts that were published recently, to be proceeded by the Biodiversity and Energy Accounts in near future, followed this document (Blignaut, 2004). An Atmospheric Account still needs to be developed as South Africa's emission standards are far below international standards (Blignaut, 2004).

3.5.3 Inventory of national economic and environmental data

Monetary and physical data are necessary to implement a corporate environmental accounting model in South Africa. Monetary data consist mainly of national aggregates and are, to a very large extent, readily available. Problems with regard to nominal and constant values of certain aggregates may, however, exist, especially fixed capital stock values.

With regard to physical data, research has shown that huge data problems exist in South Africa (Blignaut, 1995). These data problems that add up to a data availability problem need to be addressed before an exercise to implement a standalone environmental accounting system can commence. The level of data availability can be categorised in three levels of (Blignaut, 1995):

- readily available data,
- classified or not readily disclosed data, and
- data that still needs to be developed.

Third level data must be developed and presented with second level data in a transparent inventory to deem it readily available, comparable to first level data, for inclusion in an environmental accounting model.

3.5.4 Development of an easily amendable environmental accounting model

South African environmental accounting principles and environmental management systems typically do not isolate environmental costs and information in a systematic fashion, yet there are benefits in developing methods and models for doing so.

By incorporating environmental costs into an activity-based environmental accounting model, South African organisations can identify more accurately those products and projects that are driving their environmental costs. Once identified, companies would then be better equipped to determine which products to eliminate, which materials to change and what processes to modify (Nganwa, 2002).

Companies can also achieve competitive advantage not only by being in compliance, but also by understanding environmental market opportunities and proactively using that knowledge to create markets in which they have sole or leadership positions. Such objectives are likely to be facilitated by the provision of an environmental accounting model with the South African drivers for environmental accounting incorporated. Due to the diverse range of industrial activities in South Africa, this model need to have a simplistic approach and must be easily amendable for company specific purposes (Hattingh, 2002).

Finally, environmental accounting should be seen as one of the ways to challenge the widely held perception of environmental management as only a generator of costs. In particular, a future focus on tracking the financial benefits should prove that there are significant returns on investments in environmental good practice (Savage, 2003b).

With the first three solutions to implementation of sustainable corporate environmental accounting in South Africa largely dependent on government involvement, only an environmental accounting model still needs to be developed or customised from systems available in the world market to address all these fundamentals to compare the South African national industrial economy with first world standards.